Electronic Distribution of Technical Information via Satellite (EDTIS) Improved Access to Technical Information

- Charles Satterthwaite: AFRL/IFTA
- Steve Tomashefsky: Raytheon

17 June 1999
JAWSSS 99

Embedded Information System Re-engineering (EISR)

BASELINE

- **Multiple Weapon Systems**
- **Domain Expertise**
- **Recent Upgrade Technology Study Results**

Leverage Commercial Technology

Automatic Language Translation

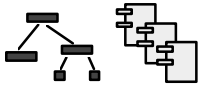
- Ada 83 to Ada 95
- CMS-2 to Ada
- Jovial to Ada
- FORTRAN to Ada

ASSESSMENT

Current Capability Vs. Need

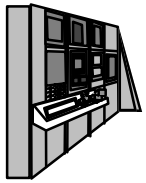
DEVELOPMENT

Mature JOVIAL J73 to C Re-engineering Capability



VALIDATION

F-16 DE/CIS & FCC Software Test Cases



Option for Demo of Execution in Hotbench Facility

TRANSITION

Technical

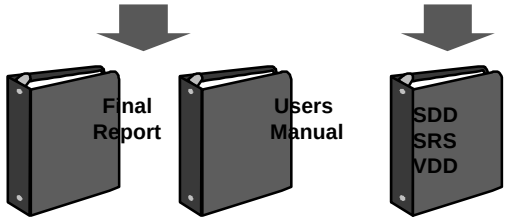
F16 CCIP M3++

Commercial

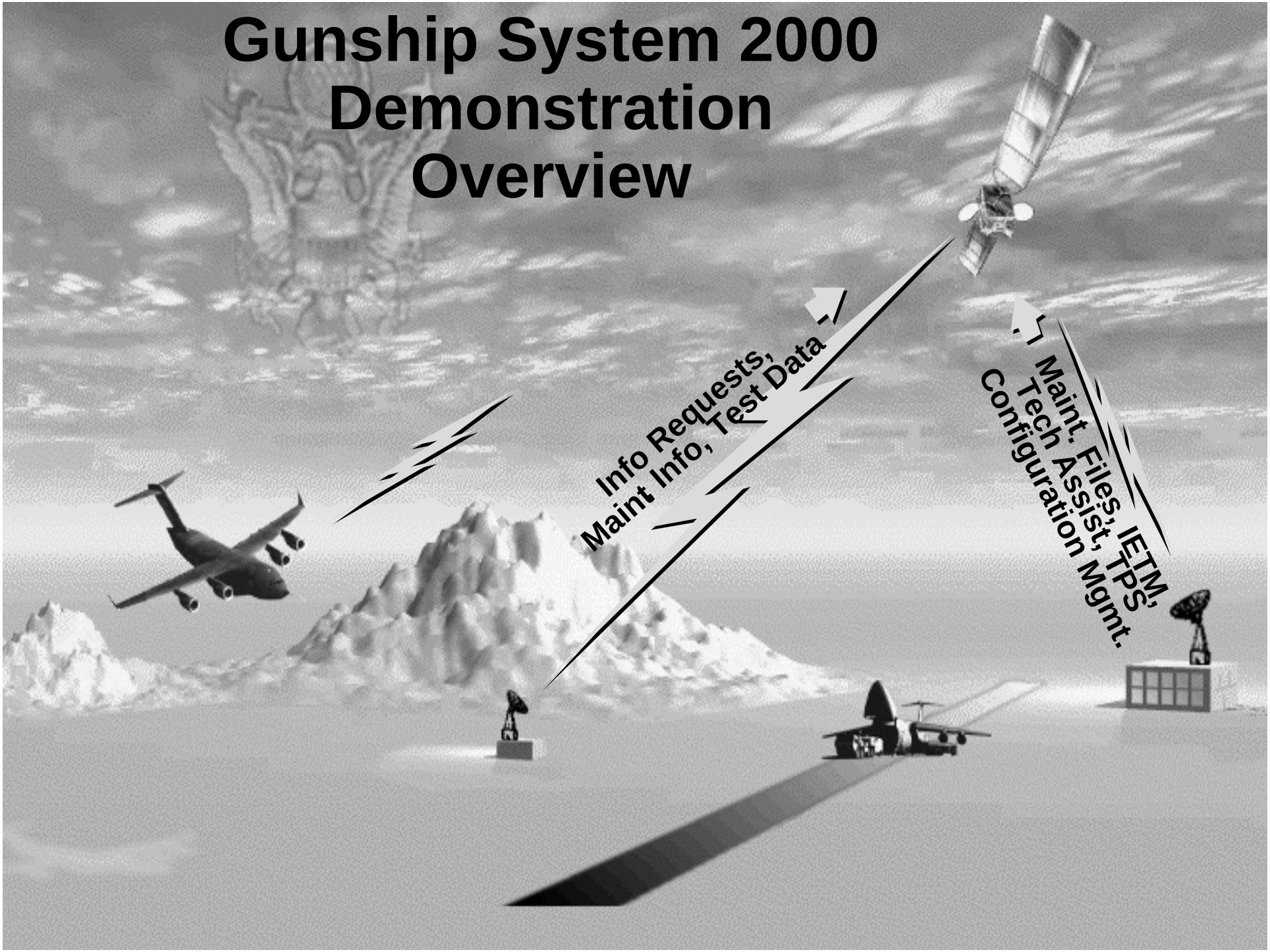
DEMONSTRATIONS & DELIVERABLES

EISR SYSTEM

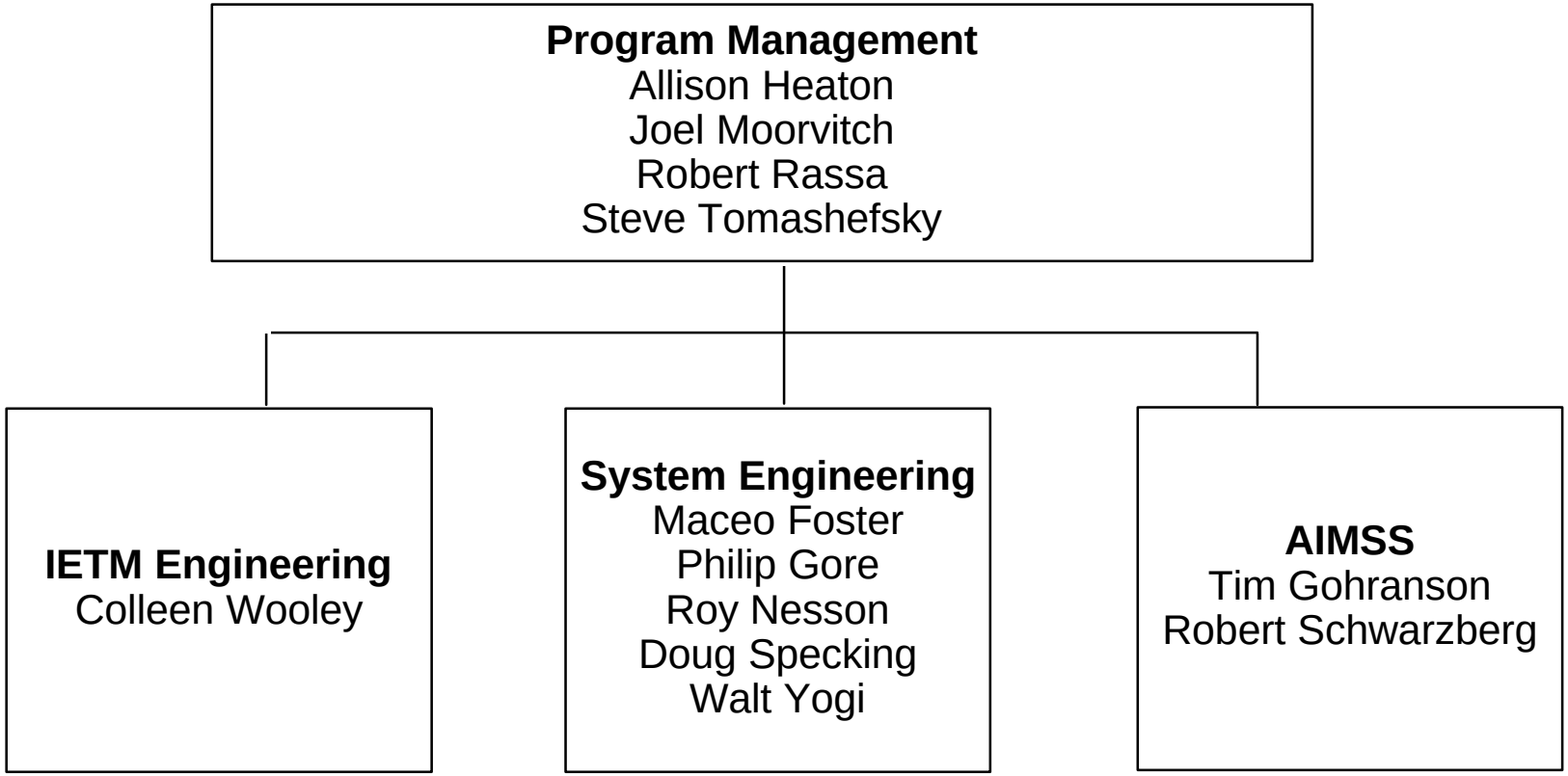
- ***Nominal***
- ***Mature***
- ***Final***



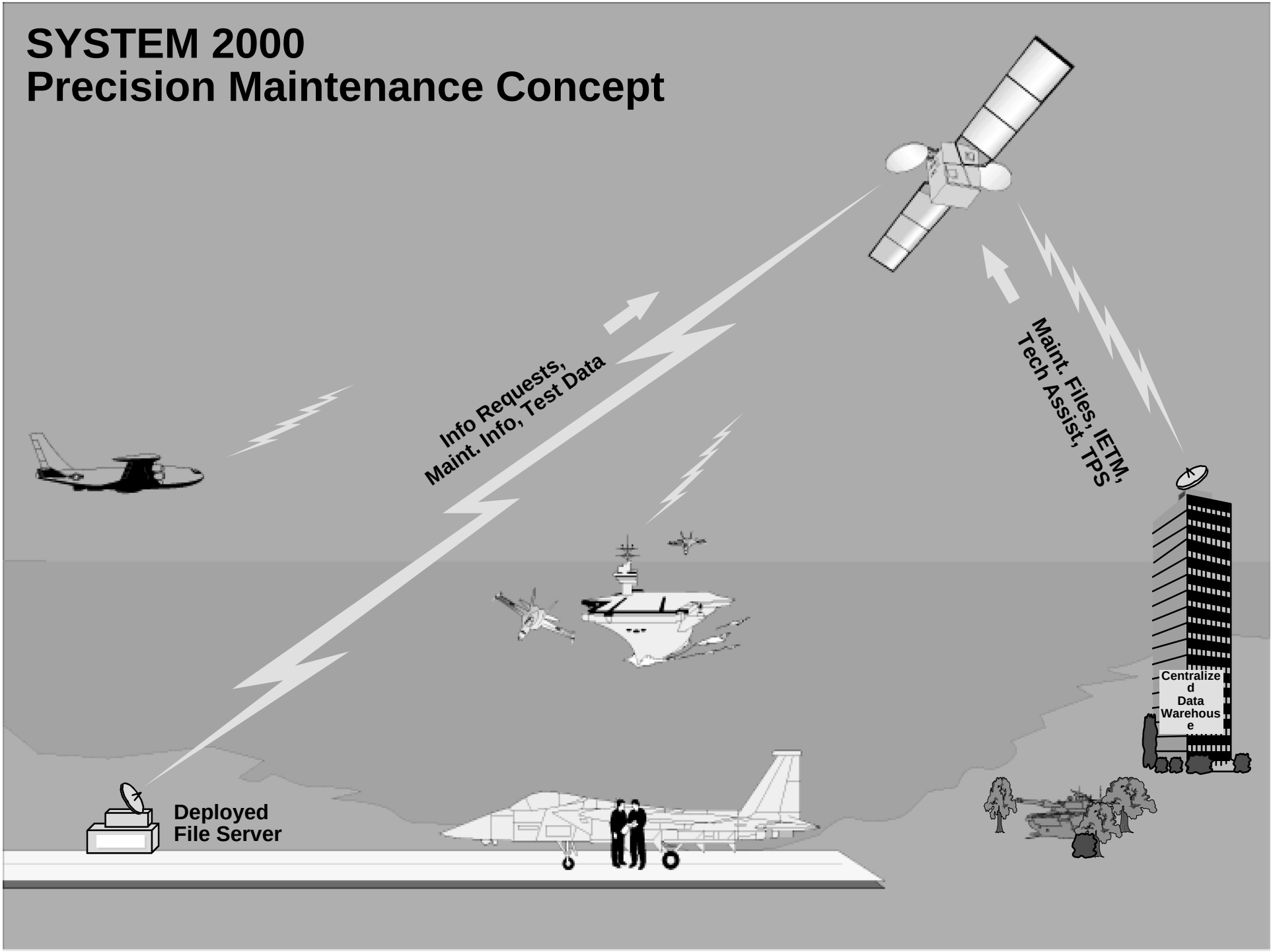
Gunship System 2000 Demonstration Overview



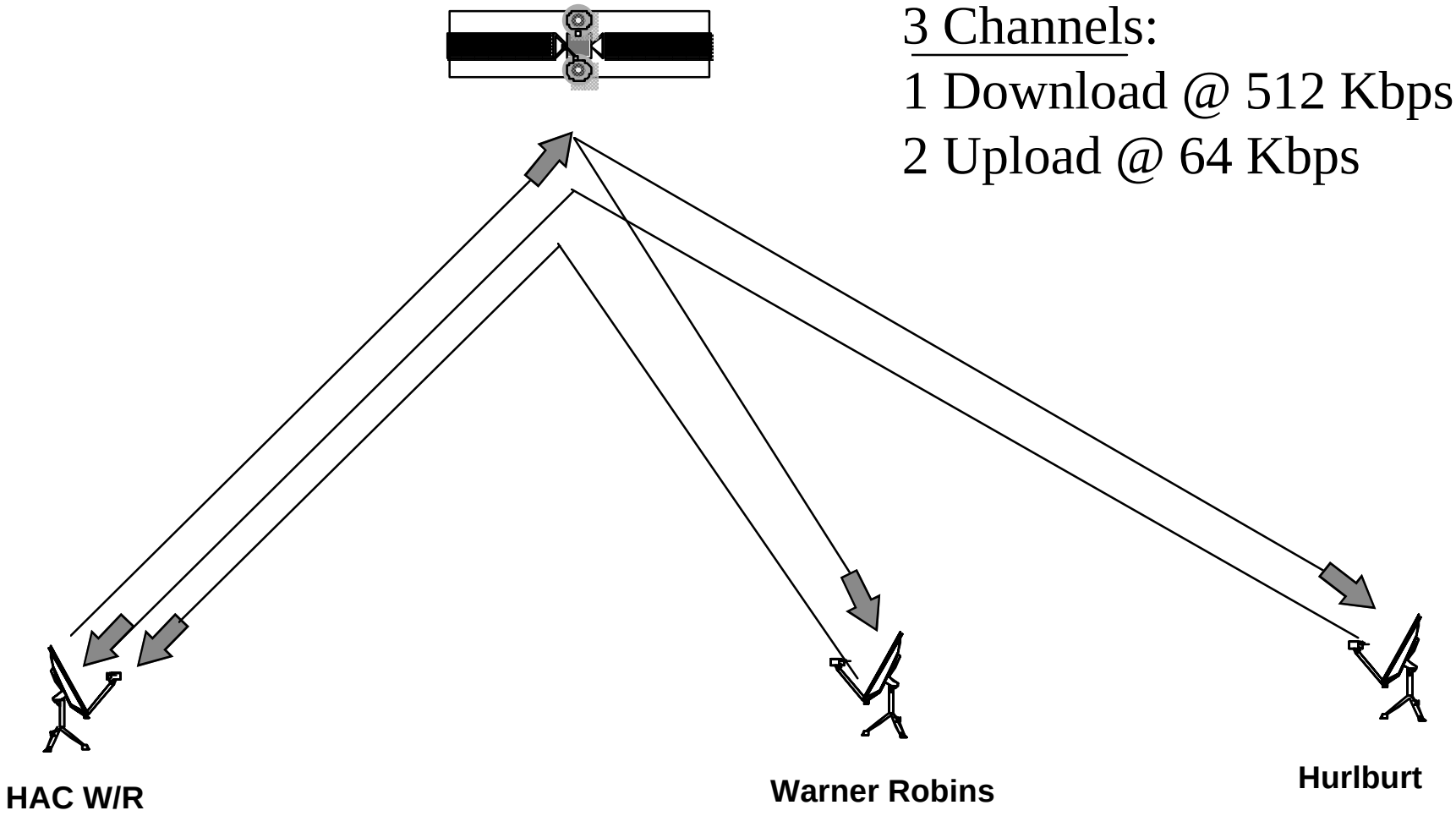
Project Team



SYSTEM 2000
Precision Maintenance Concept

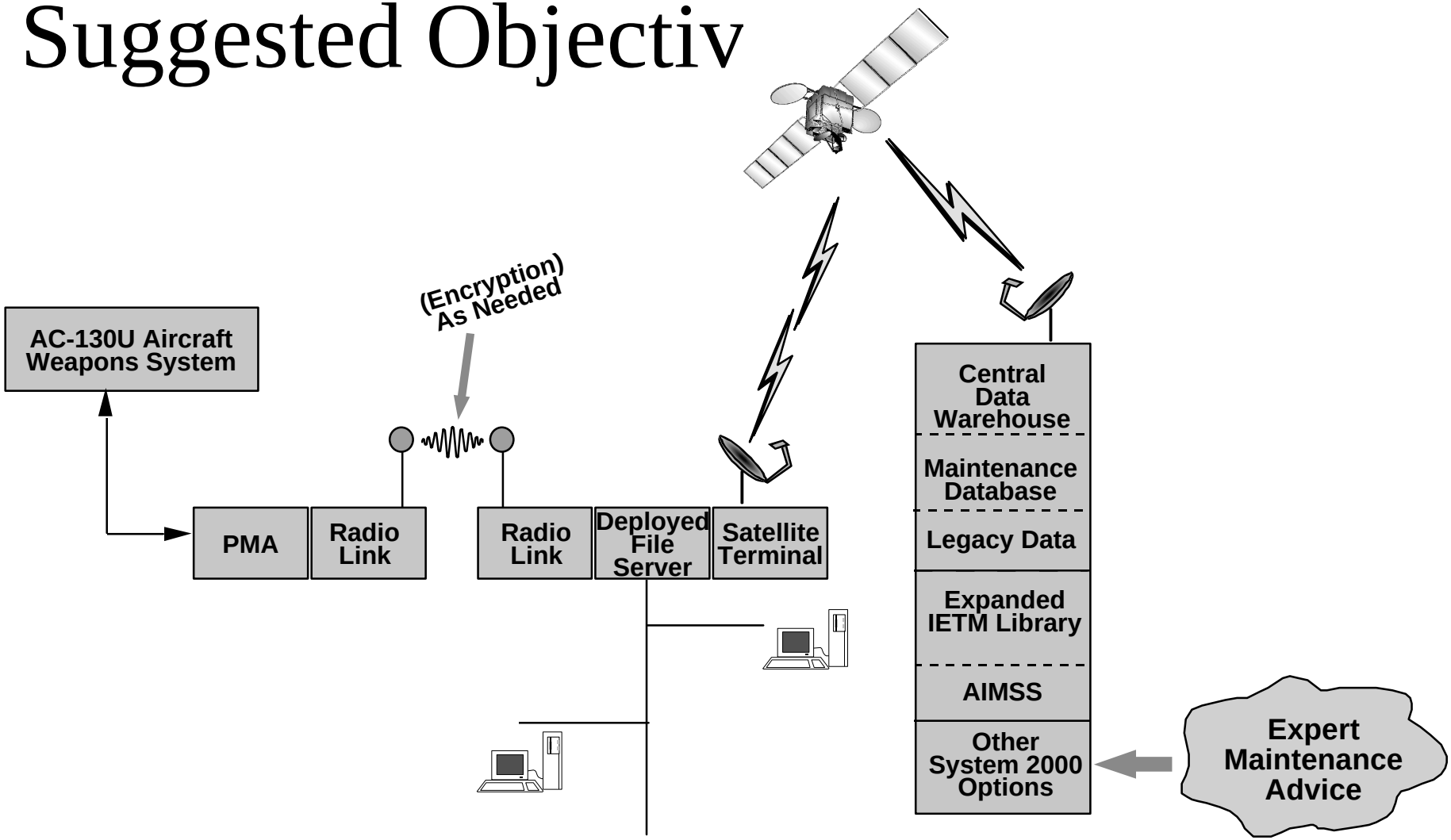


System 2000 Gunship Demo
Phase 1 Architecture

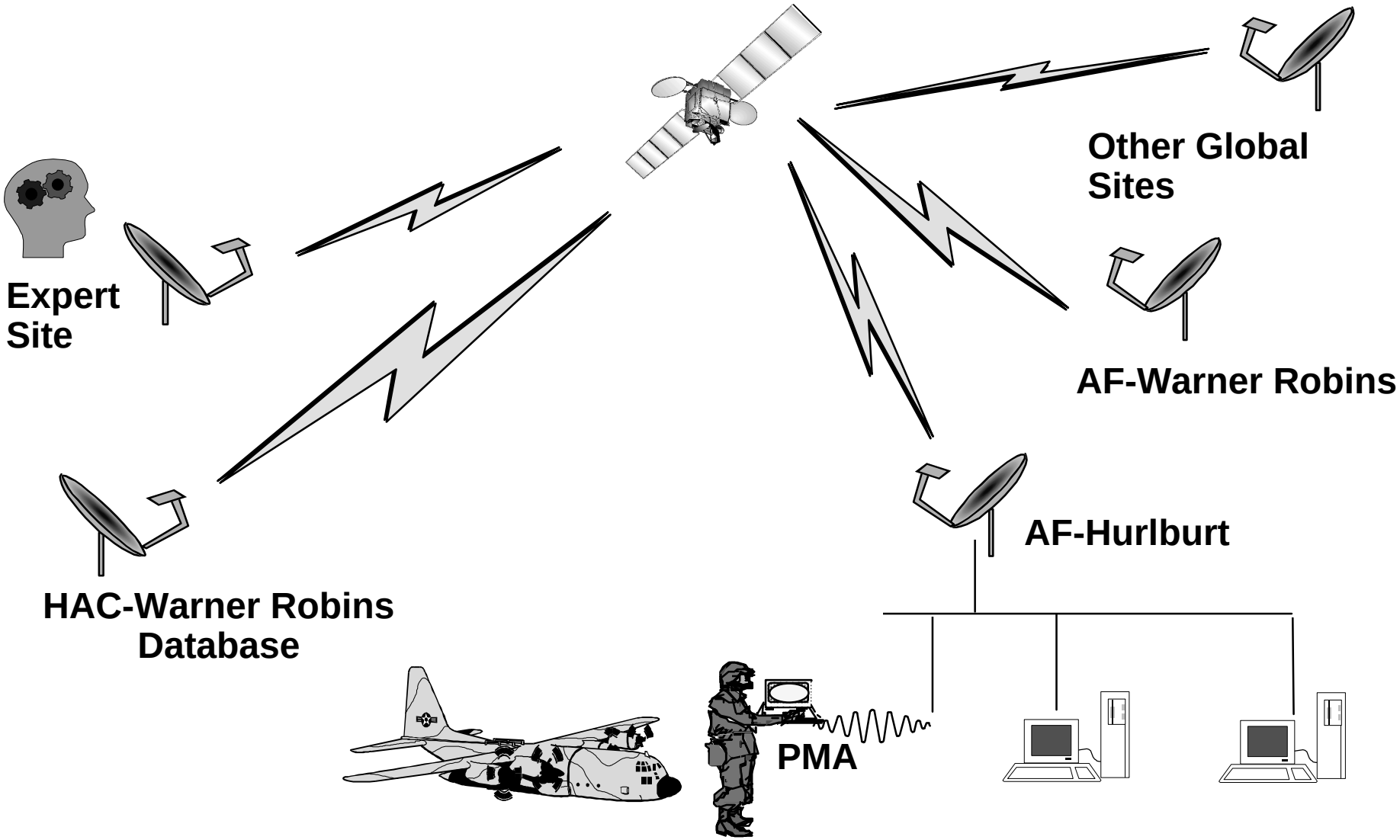


3 Channels:
1 Download @ 512 Kbps
2 Upload @ 64 Kbps

System 2000 Phase 2 Suggested Objectiv



System 2000 Gunship Phase 2 Architecture



The following is a list of several advantages of an EDTIS system:

- Eliminate distribution of paper Technical Orders and associated configuration management costs
- Eliminate distribution delays
- Assuring availability of the most current technical data
- Eliminate lost TOs and change pages
- Enable rapid deployment of Aircraft support infrastructure
- Eliminate hundreds of pounds (conservative figure) of paper
- Increase aircraft payload
- Reduced Mean Time To Repair via improved data accuracy
- Increase combat capability by reducing aircraft down time
- Decrease repair cycle costs by reducing false LRU pulls
- Reduce spares requirement by reducing false pulls
- Reduced manpower skill level requirements via “smart” IETMs
- New capabilities possible – maintenance history, fault diagnosis, automated parts ordering, etc.
- Commercial Satellite redundancy reduces resource dependence vulnerability
- On-line Expert assistance feasible to enhance 2-level maintenance policy

The best summary of this paper is to contrast the above list with common situations that weapon system maintainers face:

- Dependency on distribution of paper Technical Orders from multiple sources with non-standard configuration management of each source
- Frequent distribution delays
- Non-availability of the most current technical data
- Lost TOs and change pages, hard copies deteriorate after repeated usage
- Delayed deployment of Aircraft support infrastructure
- Required to handle and move hundreds of pounds (conservative figure) of paper
- Decreased aircraft payload
- Mean Time To Repair increased
- Decreased combat capability due to increased aircraft down time
- Increased repair cycle costs because of increased false LRU pulls
- More spares requirement because increased false pulls
- Higher manpower skill level requirements because of untimely technical data
- Reduced access to new capabilities, because of the non-standard distribution of technical data
- Inherent resource dependence vulnerability
- On-line Expert assistance difficult to enhance